STENTS: DRUG-ELUTING

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Efficacy and safety of platinum-chromium everolimus-eluting stents compared with other second-generation drug-eluting stents. Meta-analysis from 5 randomized trials including 7,896 patients

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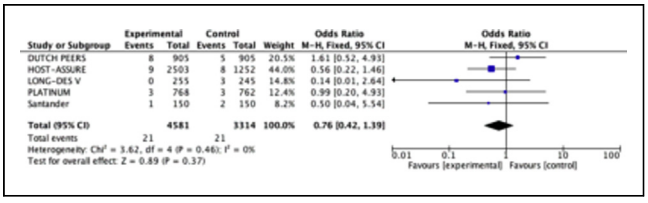
BACKGROUND Platinum-chromium alloy has been recently incorporated to the drug-eluting stent platforms, mainly everolimus-eluting stents (Promus Element -PE- stent). The objective of the study was to evaluate the efficacy and safety of PE in comparison with other second-generation drug-eluting stents.

METHODS A meta-analysis from 5 published randomized trials that compared PE with other second-generation drug-eluting stents was performed. Overall, 7,896 patients were included: 3,330 allocated to PE, and 4,566 to other stents (3,415 to cobalt-chromium everolimus-eluting, 906 to zotarolimus-eluting, and 245 to biolimus-eluting stent). In all trials, planned follow-up was 12 months.

RESULTS Clinical events at 12 months were infrequent (target lesion revascularization < 2%), and numerically lower in patients allocated to PE, but differences were not statistically different (see table). The rate of definitive/probable stent thrombosis after PE implantation at 1 year was < 0.5%.

	PE stent	Control	p value	OR (95% CI)
Target vessel failure (%)	4.6	5.3	0.65	0.95 (0.77, 1.18)
Death (%)	2.5	2.7	0.96	0.99 (0.74, 1.33)
Cardiac death (%)	1.2	1.3	0.59	0.89 (0.59 1.35)
Infarction (%)	2.1	2.7	0.51	0.90 (0.67, 1.22)
Target vessel revascularization (%)	2.2	2.6	0.70	0.74 (0.70, 1.27)
Target lesion revascularization (%)	1.6	1.8	0.88	0.97 (0.69, 1.38)
Stent thrombosis (%)	0.46	0.63	0.37	0.76 (0.42, 1.39)



CONCLUSIONS Clinical outcomes of patients treated with the platinum-chromium everolimus-eluting stent Promus Element is excellent, with rates of target lesion revascularization and stent thrombosis at 1 year of 1.8% and 0.46%, respectively.

CATEGORIES CORONARY: Stents: Drug-Eluting

KEYWORDS Meta-analysis, Platinum chromium, Stent

TCT-548

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Long Term Outcomes After Primary Percutaneous Coronary Intervention: Evidence from a Network Meta-Analysis of Trials in ST-Segment Myocardial Infarction

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BACKGROUND The relative safety of drug-eluting stents (DES) and bare-metal stents (BMS) in primary percutaneous coronary intervention (PPCI) continues to be debated. We compared the long-term clinical outcomes between 2nd generation DES and BMS for primary percutaneous coronary intervention (PCI) using network meta-analysis.

METHODS Randomized controlled trials comparing stent types (1st generation DES, 2nd generation DES or BMS) were considered for inclusion. A search strategy used Medline, Embase, Cochrane databases and proceedings of the international meetings. Information about study design, inclusion criteria and sample characteristics were extracted. Network meta-analysis was used to pool direct (comparison of 2nd generation DES to BMS) and indirect evidence (1st generation DES with BMS and 2nd generation DES) from the randomized trials.

RESULTS 12 trials comparing all stents types including 9673 patients randomly assigned to treatment groups were analyzed. Second generation DES was associated with significantly lower incidence of definite or probable ST (OR 0.59, CI 0.39-0.89), MI (OR 0.59, 95% CI 0.39-0.89) and TVR at 3 years (OR 0.50: CI 0.31-0.81) compared to BMS. In addition, there was a significantly lower incidence of MACE with 2nd generation DES vs. BMS (OR 0.54, CI 0.34-0.74) at 3 years. These were driven by a higher rate of TVR, MI and stent thrombosis in the BMS group at 3 years. There was a non-significant reduction in the overall and cardiac mortality [OR 0.83, CI (0.60-1.14), OR 0.88, CI (0.6-1.28)] with the use of 2nd generation DES vs. BMS at 3 years.

CONCLUSIONS Network meta-analysis of randomized trials of primary PCI demonstrated lower incidence of MACE, MI, TVR and stent thrombosis with 2nd generation DES compared to BMS. Use of second generation DES for PCI in STEMI was not associated with adverse events compared to BMS.

CATEGORIES CORONARY: Stents: Drug-Eluting

KEYWORDS Drug-eluting stent, Myocardial infarction, acute

TCT-554

Titratable drug delivery from drug filled stents

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BACKGROUND Polymer-free controlled drug elution has proved challenging for surface-modified drug eluting stents. Drug-filled